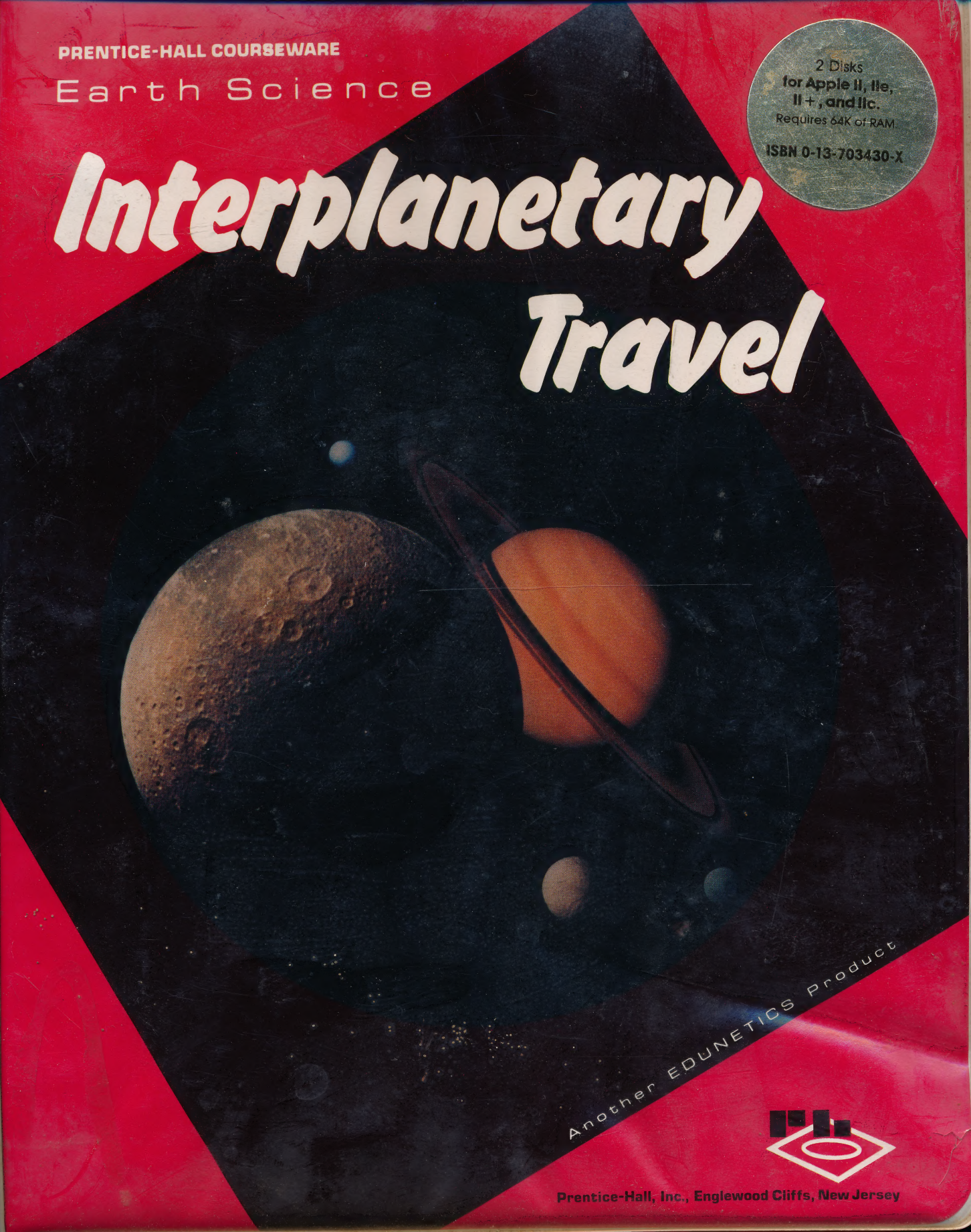
PRENTICE-HALL COURSEWARE

Earth Science

Interplanetary Travel



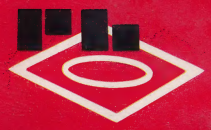
2 Disks
for Apple II, IIe, II+, and IIc.
Requires 64K of RAM.

ISBN 0-13-703430-X

Another EDUNETICS Product

Prentice-Hall, Inc., Englewood Cliffs, New Jersey

PRENTICE-HALL COURSEWARE



LIFE SCIENCE / BIOLOGY

Body Defenses
Terrestrial Biomes
Agents of Infection
Adaptation in Two Biomes
Life Zones in the Ocean
Cell Reproduction:
Mitosis and Meiosis
Food Chains and Webs
Plant Processes:
Photosynthesis and Respiration
Classifying Mammals
Laws of Genetics

EARTH SCIENCE

Plate Tectonics
Weather Station
Continental Drift
Weather Forecasting
Volcanoes
Earthquakes
Ocean Floor
Hurricanes
Life Cycle of Stars
Interplanetary Travel

PHYSICAL SCIENCE

Newton's First Law
Newton's Second Law
Newton's Third Law
Velocity and Acceleration
Voltage, Current, and Resistance
Electromagnetism
The Lever
Physical and Chemical Properties
Kinetic and Potential Energy
The Atomic Nucleus

PACKAGE CONTAINS:

Three-Ring Binder
Teacher's Guide with Activity Sheets
Diskettes
User's Card

2 Disks
for Apple II, IIe, II+, and IIc.
Requires 64K of RAM

ISBN 0-13-703430-X

BEFORE YOU START

The disks in this program are **double sided**, which means you will need to flip sides. Be sure the red light is off when removing the disks from the disk drive. Handle the disks carefully at all times.

To start the program, you must always begin with **Side 1**. If you experience any difficulty on **Sides 2, 3,** or **4** and cannot advance, begin again with **Side 1**. Do not try to reload the program with **Sides 2, 3,** or **4**.

Side 1 is self-booting. As soon as the **PIE** menu appears, you are in control of the program.

FOLLOWING DIRECTIONS

Directions appear on each screen. To input an answer, you only need to press one key, such as the following:

Press Y or N.	**Y** stands for **Yes**;	**N** stands for **No**.
Press T or F.	**T** stands for **True**;	**F** stands for **False**.

Some direction lines will include the key and what it stands for, such as the following:

Press P for protons.
Press E for electrons.

If a direction includes just the word, you only need to press the first letter, such as the following:

Press Attack or Defense.	This means you need to press the **A** or the **D** key.
Press Mechanical or Chemical.	This means you need to press the **M** or the **C** key.

When using the Apple II+, use the **A** key for the **up arrow**, and the **Z** key for the **down arrow**.

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DOS 3.3 is a copyrighted program of Apple Computer, Inc. licensed to Prentice-Hall Educational Software, Inc. to distribute for use only in combination with the Prentice-Hall Science Courseware series.

FOR THE STUDENT

To start or reboot any Prentice-Hall Courseware program, Side 1 *must* be in the disk drive. Follow the directions that are given on the diskette sleeve. There are many options available to you which are listed on each of the following program menus.

Menus

Preview Menu

1 HOW TO GET HELP
2 MEANING OF SYMBOLS
3 VOCABULARY AND GLOSSARY
4 SCIENCE SKILL
5 PIE

Purposes

Tells you how to get help while you are in the program and helps you to understand the symbols. Enables you to preview the vocabulary words and the Science Skill.

Instruction Menu

1 (SECTION TITLE)
2 (SECTION TITLE)
3 (SECTION TITLE)
4 EVALUATION
5 PIE
6 EXIT THE PROGRAM

Enables you to get to the key sections in the program. Some programs have two or four sections.

Help Menu

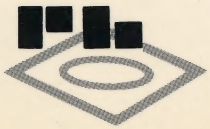
K Check meaning of keyboard symbols.
G Go to the glossary.
R Review the last sequence.
I Return to the Instruction Menu.
W Return to where you were.
X Exit the program.

The Help Menu will appear by pressing ESC while in Step 2 — Instruction. You can use any one of these options. This is also available while in the Reteach part of Step 3 — Evaluation. You *cannot* access the Help Menu during the Test nor during the Science Skill.

Section Menu

You may choose to
1 Continue to next section.
2 Review last section.
3 Return to Instruction Menu.
4 Exit the program.

Enables you to use any of these options at the end of each section. At the end of the last section in the program, the *first* option enables you to go directly to the Evaluation.



PRENTICE-HALL COURSEWARE
Englewood Cliffs, New Jersey 07632

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Edunetics Education Group

HOW TO USE YOUR DISKETTE

Loading the Program

If the computer is turned off, proceed as follows:

1. Insert Side 1 into the drive and close the drive door.
2. Turn on the monitor.
3. Turn on the computer.
4. The red light will go on while the program is loading. Wait until the red light goes off.
5. Follow the directions that appear on the screen.

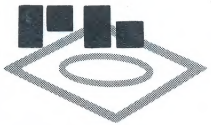
*If the computer is turned on, proceed as follows if you are using an Apple IIe or IIc:

1. Insert Side 1 into the drive and close the drive door.
2. Press and hold down the OPEN-APPLE key. Press the CONTROL and RESET key and then let go. Finally let go of the OPEN-APPLE key.
3. Follow steps 4 and 5 above.

*To restart on an Apple Plus, you must turn the power off and then on again.

Ending the Program

1. Make sure the red light on the disk drive is off.
2. Carefully remove the diskette and place it in its sleeve.
3. Turn off the computer.
4. Turn off the monitor.
5. Place the program diskettes in the plastic holder and return it to the binder.



PRENTICE-HALL COURSEWARE
Englewood Cliffs, New Jersey 07632

HOW TO CARE FOR YOUR DISKETTE

DO

Handle diskette by label edge only.
Keep diskette in this sleeve when not in use.
Store diskette at room temperature.
Insert diskette, label side up, in disk drive slowly and carefully.

DO NOT

Touch any exposed areas of the diskette.
Insert or remove the diskette while the red light is on.
Fold or bend a diskette.
Put any heavy objects on a diskette.
Turn off the computer when diskette is in the disk drive.
Place a diskette near a heat source, such as sunny window.
Write on labels with anything but a felt-tip pen.
Place diskette next to a magnetic field or metallic objects, such as TV, telephone, paper clips, or staples.
Place diskette near food and liquids.

YOUR OPINION COUNTS AT PRENTICE-HALL

After you've used this program, please evaluate it below and mail in this postage-free card.

Title of P-H Courseware _____ Hardware Version: ( ) IBM ( ) APPLE

P-H Courseware used with the following science course (circle):
Life Earth Physical General Biology Other _____

Number of students who use P-H science courseware _____

Please rate this P-H courseware program on each item listed below:

	Excellent	Satisfactory	Poor
Fits with your science curriculum	( )	( )	( )
Suitable with above-level students	( )	( )	( )
Suitable with below-level students	( )	( )	( )
Suitable with on-level students	( )	( )	( )
Concepts taught	( )	( )	( )
Quality of instruction	( )	( )	( )
Quality of student interaction with computer	( )	( )	( )
Lesson sequence	( )	( )	( )
Preview (section I of program)	( )	( )	( )
Instruction (section II of program)	( )	( )	( )
Evaluation (section III — test)	( )	( )	( )

Comments _____

_____

_____

Textbook(s) used in course: _____
(Title and Publisher)

Other software used: _____

Software purchased with what funds?
( ) Chapter II ( ) District
( ) Federal ( ) State ( ) Other _____

Who decides what science software will be purchased for your school?
( ) Science teachers ( ) Science Department Head
( ) Computer coordinator/specialist ( ) Other _____

Name _____ Title/Position _____

School Address _____

City _____ District _____ State _____ Zip _____ Tel. _____

THANK YOU FOR YOUR TIME AND ATTENTION

Please fold, fasten and mail.

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PRENTICE-HALL COURSEWARE

Earth Science

Side 1

Interplanetary Travel

Backup Disk

ISBN 0-13-703448-2

For Apple II, IIe, II+, and IIc.
Requires 64K of RAM.
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HOW TO USE YOUR DISKETTE

Loading the Program

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Ending the Program

1. Make sure the red light on the disk drive is off.
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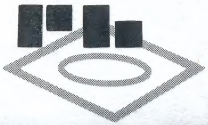
3. Turn off the computer.
4. Turn off the monitor.
5. Place the program diskettes in the plastic holder and return it to the binder.



PRENTICE-HALL COURSEWARE
Englewood Cliffs, New Jersey 07632

PRENTICE-HALL COURSEWARE

Earth Science

Side 2

HOW TO CARE FOR YOUR DISKETTE

DO

Handle diskette by label edge only.
Keep diskette in this sleeve when not in use.
Store diskette at room temperature.
Insert diskette, label side up, in disk drive slowly and carefully.

DO NOT

Touch any exposed areas of the diskette.
Insert or remove the diskette while the red light is on.
Fold or bend a diskette.
Put any heavy objects on a diskette.
Turn off the computer when diskette is in the disk drive.
Place a diskette near a heat source, such as sunny window.
Write on labels with anything but a felt-tip pen.
Place diskette next to a magnetic field or metallic objects, such as TV, telephone, paper clips, or staples.
Place diskette near food and liquids.

PRENTICE-HALL COURSEWARE
Earth Science

Side 3

Backup Disk

Interplanetary Travel

ISBN 0-13-703448-2

For Apple II, IIe, II+, and IIc.
Requires 64K of RAM.
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1 2 3 4 5 6 7 8 9 10

HOW TO USE YOUR DISKETTE

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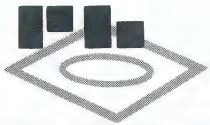

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TEACHER'S GUIDE

PRENTICE-HALL COURSEWARE

Earth Science

Interplanetary Travel

Another EDUNETICS Product

Prentice-Hall, Inc., Englewood Cliffs, New Jersey

TEACHER'S GUIDE

PRENTICE-HALL COURSEWARE

Earth Science

Interplanetary Travel

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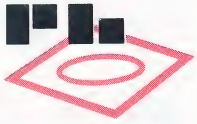

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REPLACEMENT POLICY — Prentice-Hall will replace damaged disks within this 30-day period free of charge — just return the damaged disks. After 30 days, damaged disks may be replaced by returning the disks along with a check for $12.51, which includes postage and handling.

Cover photograph by NASA. This composite photo shows the planet Saturn surrounded by six of its many moons.

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PRENTICE-HALL SETS

First in Books—

Prentice-Hall Science Courseware:

- Covers more topics than other software
- Has a 3-step lesson in *every* program
- Supplements your textbook completely
- Teaches major science concepts
- Automatically scores each student's test and keeps records

THE STANDARD—
Now in Software, Too.

3 complete series

10 programs in every series!

Choose a complete series for your entire science course:

LIFE SCIENCE and BIOLOGY
—includes Body Defenses, Plant Growth and 8 other programs!

EARTH SCIENCE
—includes Plate Tectonics, Earthquakes and 8 other programs!

PHYSICAL SCIENCE
—includes Newton's First Law, Electromagnetism, and 8 other programs!

Use all 3 series for GENERAL SCIENCE courses

See back cover for a complete list of program titles.

Every Program Has a Simple 3-Step Lesson So Learning's as Easy as P I E . . .

1. PREVIEW (time: 2-5 mins.)

A brief introduction with:

Key Concepts
Program Menu
Help Screens
Vocabulary List and a Glossary
Science Skill Activity

(Preview is optional and accessible to the student at any time except during the test in step 3.)

2. INSTRUCTION (time: 20-25 mins.)

Information, questions for students to answer, simulations, interactions, and activities to spark motivation and learning.

Review of the entire lesson, one section, or any part of the Preview is a student option before Step 3—Evaluation.

3. EVALUATION (time: 5-10 mins.)

A test of ten questions, during which students may not enter any other part of the program. After the test, students receive their scores and feedback on specific errors.

Reteaching is automatic on any concepts they've missed . . . using new material.

COURSEWARE

Everything You Need to Get Started at Once

Every program has:

Disks with directions when students need them, a glossary, an activity on a science skill, and a built-in 3-step lesson that provides active learning.

User's Card with simple directions for using the hardware, the disks, the keyboard, and exiting the program when students are finished.

Teacher's Guide with free Activity Sheets, discussion topics, a correlation chart, and suggested ways to use the program within your science curriculum.

All in a sturdy 3-ring binder for easy storage!
(10 binders in every series)

PRENTICE-HALL

Sets the Standard

FLEXIBILITY is built into every program—allowing advanced students to proceed quickly, while lower-ability students receive more feedback and reteaching. All students have the option of reviewing the material at their own pace. And everyone can work independently, saving you hours of time.

THE SCIENTIFIC METHOD—is reinforced throughout each program. Students learn to observe, hypothesize, and draw conclusions.

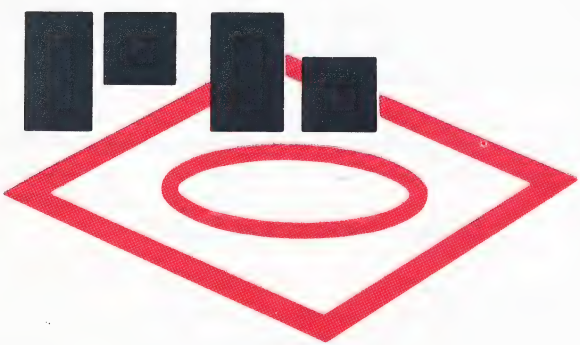
SIMULATIONS AND EXPERIMENTS—especially those that are too difficult, costly, and/or time-consuming—are featured to illustrate concepts that are tough to teach using only a textbook.

ANIMATION is dramatic and in full color to motivate students.

COURSEWARE Every Time

KEY SCIENCE SKILLS—such as how to read grids, graphs, and diagrams; how to follow directions in an experiment; and many more are made vital and alive so students work with enthusiasm . . . and success.

MANAGEMENT DISK—available separately—automatically compiles test scores throughout the year for students, individually and for entire classes.



FREE CORRELATION CHARTS are available—listing chapters and pages for all major science texts to help you use each title when it best fits your course.

USING PRENTICE-HALL COURSEWARE

Prentice-Hall Courseware covers the key concepts you teach in Life, Earth, and Physical Science curricula as well as in General Science and Biology. Each science series has ten complete programs designed to supplement your entire science course. Each individual program focuses on a specific science concept.

The way in which you use this program will depend on your students' needs. No prerequisite knowledge is required. You may use each program in any one of the following ways.

To introduce a concept in a motivating way, before students read their textbooks. Lower-ability students may benefit especially from this initial presentation.

To reinforce a concept with individual students or small groups while they are studying the corresponding concept in their textbooks.

To review a concept after textbook study or before a test.

To extend and enrich a concept in the textbook.

To bring science to life in ways that a textbook cannot.

To explore a concept in depth, using not only the software, but also the Discussion Questions and Activity Sheets provided in this booklet.

Correlation to Prentice-Hall Science Textbooks

This Prentice-Hall Courseware program correlates closely with specific pages in your Prentice-Hall textbook, as shown in the chart below. Prentice-Hall Courseware also correlates well with other science textbooks. For a complete listing of all the Prentice-Hall Courseware programs available, see the back cover of this booklet.

CORRELATION CHART

Section	PRENTICE-HALL EARTH SCIENCE ©1984, ©1986	PRENTICE-HALL GENERAL SCIENCE ©1986
1. The Solar System	Chap. 2, pp. 60–91	***Voyage of Discovery*** Chap. 3, pp. 66–99
2. The Inner Planets	Chap. 2, pp. 69, 71–75	***Voyage of Discovery*** Chap. 3, pp. 73–81
3. The Outer Planets	Chap. 2, pp. 75–78	***Voyage of Discovery*** Chap. 3, pp. 74–75, 81–92

TO THE TEACHER *An Overview of INTERPLANETARY TRAVEL*

Each program in the Prentice-Hall Science Courseware Series has three steps: (1.) Preview, (2.) Instruction, and (3.) Evaluation (PIE).

STEP 1 *Preview*

Getting Started: Students new to Prentice-Hall Science Courseware can select instruction in any one of the following: (1) Using the Keyboard; (2) How to Get Help; and (3) Meaning of Symbols.

Vocabulary and Glossary: Students see a list of the concept or technical words used in the program. Students can choose to see the glossary definition of any of these words.

INTERPLANETARY TRAVEL

escape velocity	orbit	rotation
gravity	outer planets	solar system
inner planets	revolution	

Science Skill: An activity is provided on one science skill that students will be required to use in Step 2, Instruction. Science skills include such skills as reading a grid or climatogram, identifying causes-and-effects, reading a cyclic diagram, and numerous other skills relevant to science content.

INTERPLANETARY TRAVEL
Using data to make comparisons

STEP 2 *Instruction*

Instruction is sequential and highly interactive. Each section of the Instruction focuses on one of the key concepts.

Sections: Each section has an objective, highly interactive instruction on the key concept, then a brief review, followed by check-up question(s). Students advance easily within each section by following the directions at the bottom of each screen.

INTERPLANETARY TRAVEL

Section 1. The Solar System

Objective 1: "...you will be able to use the location of the planets and their escape velocities to plan a trip through the solar system."

The section opens with a graphic showing the planets' elliptical orbits and a question that elicits from the students the response that orbits are elliptical, or oval. Students go on to divide the planets into inner and outer groupings, based on the planets' distances from the sun. As students need to base their comparisons on data, the Science Skill is available early in the program. Data is analyzed in order for students to plan an interplanetary trip. Students also compare escape velocities and conclude why a specific velocity is ideal for blast off from Earth.

Review and Check-up question(s) complete Section 1.

Section 2. The Inner Planets

Objective 2: "...you will be able to identify major features of the inner planets."

In this section, students set off from Earth on their trip to each of the three other inner planets. They first find each planet's orbit. They blast off from Earth, using the correct escape velocity, bound for Mercury. On Mercury, they learn about its rocky surface, its temperature variations, and its periods of rotation and revolution. Students leave Mercury for Venus, where they learn about Venus' atmosphere, high temperatures due to the greenhouse effect, and retrograde rotation. The next stop is Mars, where students observe Mars' red color, prominent surface features, and moons. The data base is available throughout the section so students can access relevant information about the planets they are visiting.

Review and Check-up question(s) complete Section 2.

Section 3. The Outer Planets

Objective 3: "...you will be able to identify major features of the outer planets."

Students begin this section by identifying the orbit of each of the five outer planets. Using the data base, students access information on Pluto, Neptune, Uranus, Saturn, and Jupiter in order to state conclusions about the planets' distances from the sun, diameters, densities, masses, moons, periods of rotation and revolution, orbital velocities, and so on. Students also observe prominent surface features of these planets, such as the Great Red Spot on Jupiter and the rings of Saturn.

Review and Check-up question(s) complete Section 3.

Review: Before students move to Step 3: Evaluation, they are reminded that they may review previous sections.

STEP 3 *Evaluation*

The Evaluation step provides students with a test and a reteach section. A built-in record-keeping system is available for teacher's use only.

Test: Each program has a 10-item test designed to evaluate the key concepts. Students must be able not only to recall knowledge, but also to apply the concepts presented in the program. The test may be used as a pretest or posttest. After completing the test, students see a summary of their performance.

Reteach: Students automatically receive reteaching with new material on each question that was answered incorrectly on the test. The correct answer is explained in both text and graphics.

Record Keeping: The record-keeping system automatically keeps track of each student's test performance for up to 100 students. If students take the test more than once, only the last score is retained. Students taking the test are asked to enter their names and a class designation assigned by the teacher (such as the class number). A record-keeping chart appears on page 24. Students' scores can be transferred to this chart by putting a check mark wherever an item was answered correctly.

Copy Master Activities and Discussion

Activity sheets for each program are included on pages 11–23. A summary activity and frequently a library investigation, which can be used as a retest, are also included. These activities reinforce and review each key concept and the science skill. They can be used before or after students use the courseware. Discussion questions can be used to explore and extend the science concepts.

DISCUSSION QUESTIONS

Use the following questions for class discussion, or have students write their answers on a separate sheet of paper.

1. What is the relationship between escape velocity and the mass of a planet? Explain your answer in terms of gravitational attraction.
2. Why do smaller planets tend to have less atmosphere than do larger planets?
3. Describe a theory that accounts for the formation of the solar system. How does this theory account for the fact that the inner planets are rocky, whereas the outer planets are, in general, gaseous?
4. If a scale model of the solar system were constructed so that the sun was the size of an orange, what would the orbital distances of the planets be? What would the approximate diameters of the planets be?
5. What is the shape of planetary orbits? How does the relative orbital speed of a planet when it is nearest to the sun compare to its orbital speed when it is farthest from the sun?
6. How is a planet's period of rotation related to its size? How might you account for this relationship?

LIBRARY INVESTIGATION

Using recently published reference material in the library, do research on the *Viking* and *Voyager* space probes that provided information about the planets Mars, Jupiter, and Saturn. Describe the structure of the probes, the planning of their path and time of firing, their general operation, and their information-gathering devices. Also report on the discoveries made about the planets as a result of their probes.

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ACTIVITY 1

Locating the Planets

The drawing on page 13 shows a model of the solar system. Identify each of the bodies indicated, working outward from the center, and write their names in the blanks.

When you have finished, fill in the blanks below by carrying over the letters that correspond to the numbers indicated. If you are successful, you will spell out an important message relating to interplanetary travel.

Message: ___ ___ (19 60) ___ ___ ___ ___ ___ ___ (5 32 7 22 50 16) ___ ___ ___ ___ ___ ___ ___ (25 52 55 39 34 49 38)

___ ___ ___ ___ (10 59 26 6) ___ ___ ___ ___ ___ ___ ___ ___ (11 5 56 59 7 28 51 10)

___ ___ ___ ___ (21 14 1 51) ___ ___ (62 54) ___ ___ ___ ___ (11 30 61 10) ___ ___ ___ ___ (20 63 41 20)

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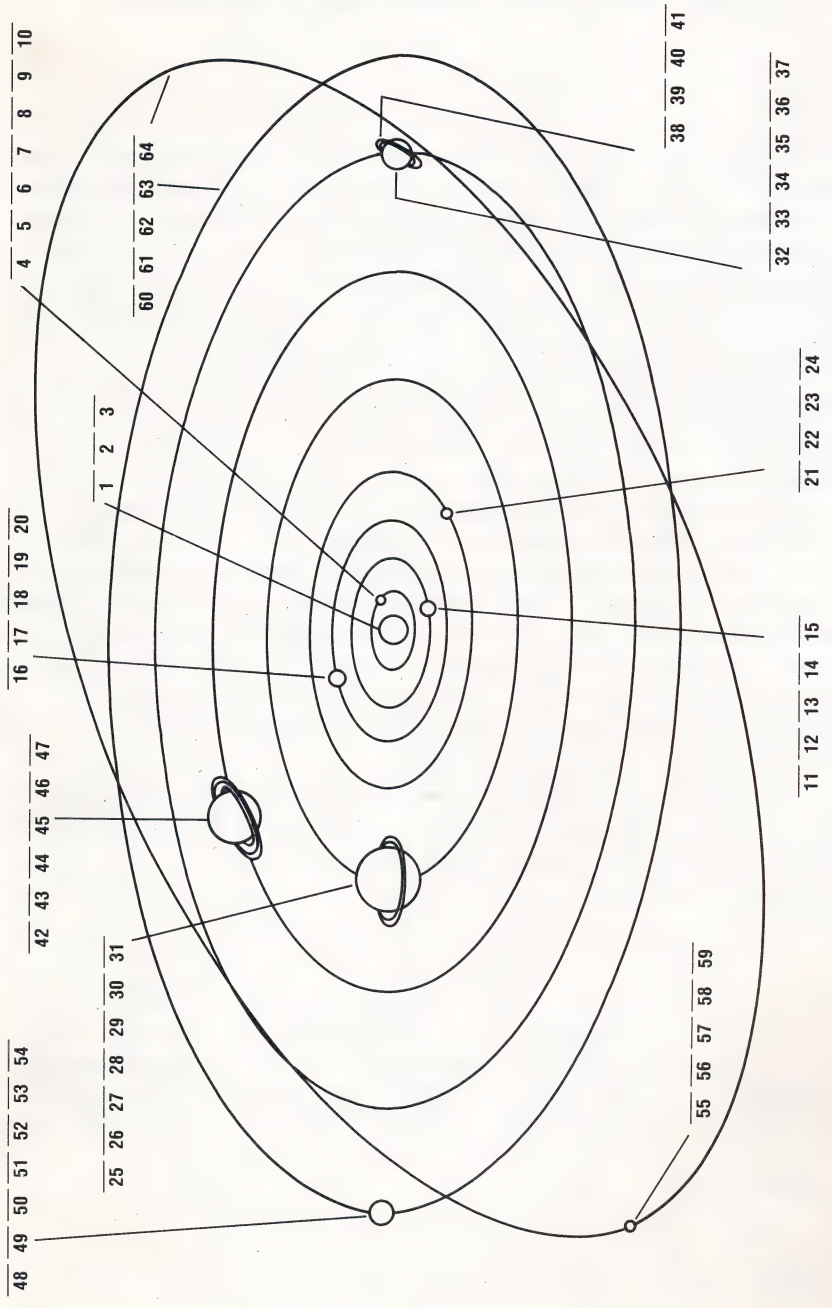
ACTIVITY 1



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ACTIVITY 2

Trip to the Inner Planets

In this activity, you will plot the path of a manned space probe that is fired from Earth and that passes close to Venus, Mercury, and Mars, in that order. The drawing on page 15 shows the planets in their positions at the time of blastoff from Earth. As the probe moves through space, the planets move along their orbits. The time and the direction of the firing have been chosen so that the planets will move into positions that lie along the probe's path.

The table below lists the periods of revolution, in Earth days, of the planets to be reached as well as the numbers of Earth days, after firing from Earth, that the probe requires to reach the planets' orbits. Calculate, to the nearest tenth of a revolution, how many orbital revolutions each planet will go through before the probe reaches it. Write this number in the table. Then, on the drawing, mark each planet's position at the time the probe passes next to it. (Example: if the probe took 1105 days to reach a planet whose period of revolution was 1000 days, the planet will have gone through $^{1105}/_{1000} = 1.105 = 1\,^{1}/_{10}$ revolutions. Thus, the planet will have moved all the way around its orbit once, and then reached a position $^{1}/_{10}$ farther along the orbit. Note that the orbits have been marked off in tenths, for ease in locating position.

Assume that the planets move in a clockwise direction. After you have drawn in the planets' positions, draw a smooth curve that passes, from Earth, through these positions. This curve represents the path of the probe.

Column 1 Planet	Column 2 Period of Revolution (Earth days)	Column 3 Time Probe Requires to Reach Planet, from Earth (Earth days)	Column 4 Number of Orbits Planet Goes Through Before Probe Reaches It (Divide Column 3 by Column 2)
Venus	225	67	_____
Mercury	88	158	_____
Mars	687	412	_____

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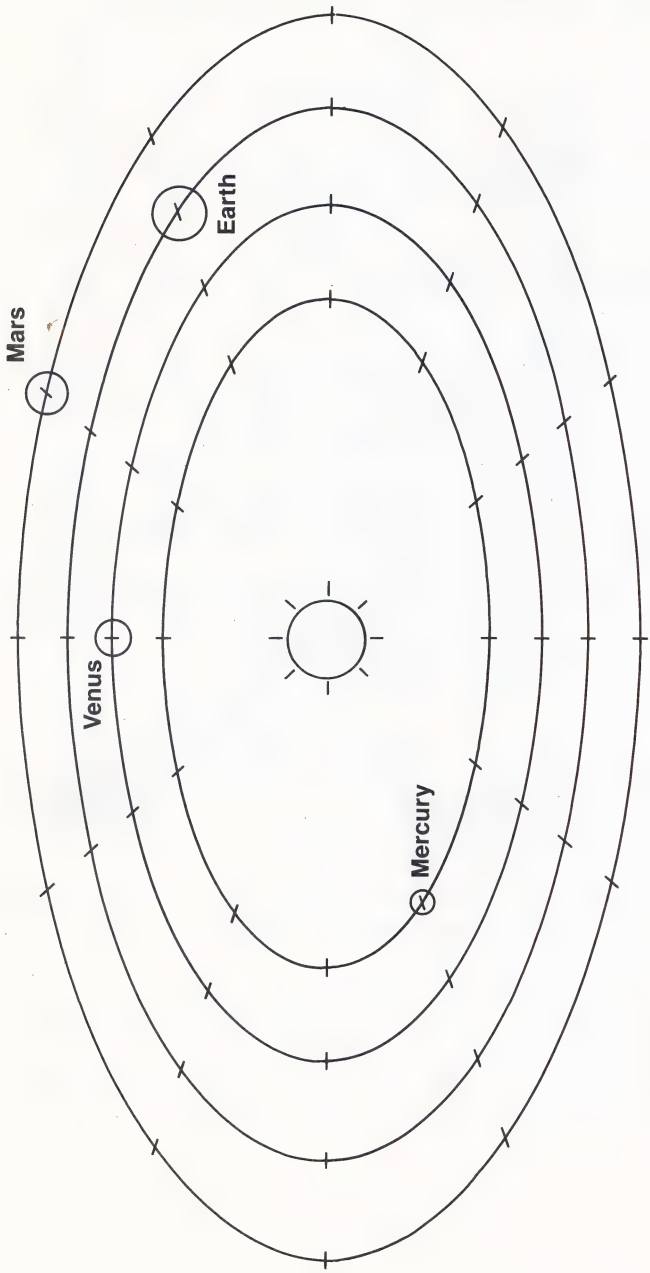
ACTIVITY 2



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ACTIVITY 3

Outer Planets Crossword

Use the following clues to correctly fill in the crossword on page 17.

ACROSS

1. Path of a planet
3. Number of satellites Earth has
5. A planet's moon
6. Third planet from the sun
7. Fourth planet from the sun
10. Movement of a planet around the sun
11. Color of Mars and of Jupiter's Great Spot
12. Sixth planet from the sun
14. Quality that is the same for Uranus and Neptune
16. What the sun is
18. Seventh planet from the sun
19. Ninth planet from the sun

DOWN

2. Spinning of a body on its axis
3. Planets far from the sun
4. Minimum speed required for an object to move beyond the gravitational field of a planet
8. The nearest star
9. Fifth planet from the sun
12. System of which the sun and planets are a part
13. Eighth planet from the sun
15. What Jupiter and Saturn are mostly made of
17. Very fine solid matter found in space

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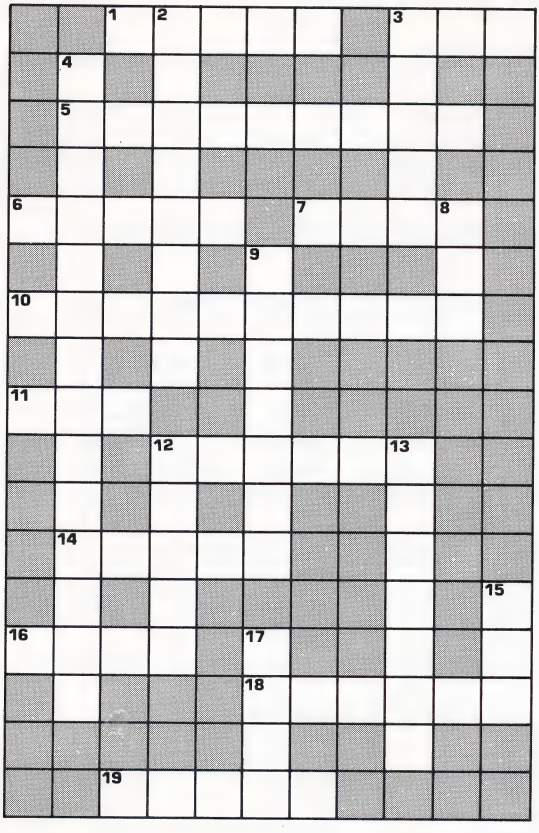
ACTIVITY 3



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ACTIVITY 4

Planetary Table

The table on page 19 contains information about the planets. Use the table to answer the following questions.

1. **a.** Which planet is, on average, closest to the sun? _____

   b. Which planet is, on average, farthest from the sun? _____

2. **a.** Which planet is, on average, closest to Earth? _____

   b. How many kilometers separate the two orbits? _____

3. **a.** Which planet has the smallest diameter? _____

   b. Which planet has the largest diameter? _____

   c. How much larger, in kilometers of diameter, is the largest planet than the smallest? _____

   d. Do you notice any general relationship between the size of the planets and their distance from the sun? If so, what is it? _____

4. **a.** Which planet has the shortest period of revolution? _____

   b. Which planet has the longest period of revolution? _____

   c. Do you notice any general relationship between period of revolution and distance from the sun? If so, what is it? _____

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ACTIVITY 4

5. a. Which planet moves at the slowest orbital speed? _____

b. Which planet moves at the fastest orbital speed? _____

c. Do you notice any general relationship between orbital speed and distance from the sun? If so, what is it? _____

_____

_____

Planet	Average Distance from Sun (Millions of km)	Diameter (km)	Period of Revolution (Earth days or Earth years)	Orbital Speed (km/sec)
Mercury	58	4,880	88 days	47.8
Venus	108	12,104	225 days	35.0
Earth	150	12,756	365 days	29.8
Mars	228	6,794	1.88 years	24.2
Jupiter	778	142,700	11.86 years	13.1
Saturn	1,427	120,000	29.46 years	9.7
Uranus	2,869	50,800	84.01 years	6.8
Neptune	4,486	48,600	164.8 years	5.4
Pluto	5,890	4,000	247.7 years	4.7

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ACTIVITY 5

Interplanetary Travel

For the following questions, circle the letter of the correct answer.

1. Escape velocity depends upon a planet's
   - **a.** mass.
   - **b.** atmosphere.
   - **c.** period of rotation.
   - **d.** period of revolution.

2. The amount of time a planet requires to turn once upon its axis is called
   - **a.** orbital speed.
   - **b.** period of rotation.
   - **c.** period of revolution.
   - **d.** none of the above.

3. The amount of time a planet requires to travel once around the sun is called
   - **a.** orbital speed.
   - **b.** period of rotation.
   - **c.** period of revolution.
   - **d.** none of the above.

4. The planet closest to the sun is
   - **a.** Mars.
   - **b.** Jupiter.
   - **c.** Pluto.
   - **d.** Mercury.

5. The planet that has a Great Red Spot is
   - **a.** Mars.
   - **b.** Jupiter.
   - **c.** Pluto.
   - **d.** Mercury.

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ACTIVITY 5

6. The planet whose size is closest to that of Earth is

a. Mars.

b. Venus.

c. Saturn.

d. Pluto.

7. The mountainous planet that has a dense atmosphere of carbon dioxide is

a. Mars.

b. Venus.

c. Saturn.

d. Pluto.

8. The planet that has the largest number of satellites is

a. Mars.

b. Venus.

c. Saturn.

d. Pluto.

9. A planet that has rings around it is

a. Saturn.

b. Uranus.

c. both Saturn and Uranus.

d. neither Saturn nor Uranus.

10. Which of the following is not classified as a rocky planet?

a. Jupiter

b. Earth

c. Mars

d. Pluto

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ANSWER KEY

ACTIVITY 1

Locating the Planets

Blanks: Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, ring, Uranus, Neptune, Pluto, orbit

Message: To escape Jupiter, your velocity must be very high.

ACTIVITY 2

Trip to the Inner Planets

Venus completes $\frac{3}{10}$ of an orbit, Mercury completes $1\frac{8}{10}$ orbits, Mars completes $\frac{6}{10}$ of an orbit.

ACTIVITY 3

Outer Planets Crossword

ACROSS

1. orbit
3. one
5. satellite
6. Earth
7. Mars
10. revolution
11. red
12. Saturn
14. color
16. star
18. Uranus
19. Pluto

DOWN

2. rotation
3. outer
4. escape velocity
8. sun
9. Jupiter
12. solar
13. Neptune
15. gas
17. dust

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ACTIVITY 4

Planetary Table

1. **a.** Mercury
   b. Pluto
2. **a.** Venus
   b. 42 million km
3. **a.** Pluto
   b. Jupiter
   c. 138,700 km
   d. The planets that are close to the sun are rather small, whereas those that are far (with the exception of Pluto) are large.
4. **a.** Mercury
   b. Pluto
   c. The farther a planet is from the sun, the longer is its period of revolution.
5. **a.** Pluto
   b. Mercury
   c. The farther a planet is from the sun, the slower is its orbital speed.

ACTIVITY 5

Interplanetary Travel

1. a
2. b
3. c
4. d
5. b
6. b
7. b
8. c
9. c
10. a

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Interplanetary Travel

	The Solar System			The Inner Planets			The Outer Planets				
Students' Names	1	2	3	4	5	6	7	8	9	10	Score

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NOTE TO THE TEACHER: The following information should NOT be made available to students.

USING THE RECORD-KEEPING SYSTEM

If you are using the Apple II, Apple II+, IIe, or IIc version, do the following:

1. Insert **Side 1** and start the program.
2. While the title "Prentice-Hall Courseware" or the specific program title is on the screen, press **T** and then quickly press the **Left Arrow (←)** key.
3. Choose one of the options:
    1. See all test results
    2. See one class's test results
    3. See one student's test results
    4. Erase all test results
    5. Erase one class's test
4. Follow the screen instructions.
5. To print a list on a standard 80 character printer (Epson or compatible), first locate the list on the screen, then press **P.**

If you are using the IBM/PC version, do the following:

1. Insert **Diskette 1** and start the program.
2. While the title "Prentice-Hall Courseware" or the specific program title is on the screen, press **T** and then quickly press the **Backspace (←)** key.
3. Choose one of the options:
    1. See all test results
    2. See one class's test results
    3. See one student's test results
    4. Erase all test results
    5. Erase one class's test
4. Follow the screen instructions.
5. To print a list on a standard 80 character printer (Epson or compatible), first locate the list on the screen. Then hold the **Shift (⇧)** key down while you press the **PrtSc** key.

The Record-Keeping System will hold 100 student test results. To enter additional test results, you must use the "Erase" option.

The diskettes in the Apple programs contain a high-speed operating system called Diversi-DOS™, which is licensed for use with this program. To use Diversi-DOS™ with any other program, please write to DSR, Inc., 34880 Bunker Hill, Farmington, MI 48108. Diversi-DOS™ Copyright © 1983 by DSR, Inc.

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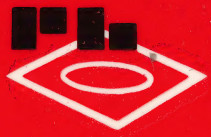

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